

viation variable in response to the TENTHCONV and the FIFTHCONV variables provided by the background routine in step 474. Specifically, in response to the sum of the variables TENTHCONV T₁₀ and FIFTHCONV T₅, the system enters one of the five levels of abbreviation of the weather advisory as described in Table II above.

The modification of the advisory abbreviation and the time between the pop-up intervals allows the system to adapt to high traffic instances and essentially fall into the background in such situations. Therefore, this system will not take up valuable broadcast time in situations where the channel is required for the more important inter-party communication role.

In the foregoing description, the system allows the pilot to select between the weather advisory 422, radio check 424, and propriety mode 432 on the basis of detected clicks of the pilot's transmit button. Alternatively, this selection could be made with voice recognition software. In more detail, the event could be detected in step 420 in FIG. 4A by applying a voice recognition algorithm to the broadcast on the frequency. If a pilot were to say, for example, "Broadcast advisory", the system would recognize this phrase and activate the broadcast advisory subroutine of FIG. 4C. In a similar vein, the radio check or propriety mode subroutines could be activated by statements such as "radio check" or "propriety", respectively.

Those skilled in the art will know, or be able to ascertain using no more than routine experimentation, many equivalents to the specific embodiments of the invention described herein. These and all other equivalents are intended to be encompassed by the following claims.

What is claimed is:

1. A method for providing weather information to pilots for an airport, comprising:

determining weather conditions for the airport;
monitoring a radio frequency, assigned to voice communications of the airport, for a predetermined protocol indicative of a pilot attempt to access the weather information by classifying broadcasts from other sources based upon a length of a carrier signal;
monitoring the radio frequency for inactivity with no voice transmissions from other sources; and
broadcasting an audio weather advisory on the radio frequency in response to detecting the inactivity after detecting the predetermined protocol, the weather advisory being derived from the determined weather conditions.

2. A method as described in claim 1, further comprising stopping the broadcast of the weather advisory after receiving the predetermined protocol in response to detecting transmissions from other sources lasting over a set time period.

3. A method as described in claim 1, further comprising: determining a level of traffic on the radio frequency; and stopping the broadcast of the weather advisory based on the level of traffic.

4. A method as described in claim 3, further comprising scheduling the broadcast of the weather advisory in the future if the level of traffic was determined to be high.

5. A method as described in claim 1, further comprising: reviewing the determined weather conditions and determining any relevant weather parameters;
including only relevant weather parameters in the broadcast weather advisory.

6. A method as described in claim 1, wherein the step of monitoring the radio frequency for the predetermined protocol comprises:

applying a voice recognition algorithm to the transmission on the radio frequency; and

broadcasting the weather advisory if a selected phrase was detected.

7. A method as described in claim 1, wherein the step of monitoring the radio frequency for the predetermined protocol comprises:

detecting clicks from a transmit button of another transceiver on the radio frequency; and

broadcasting the weather advisory if a selected number of clicks was detected.

8. A method as described in claim 1, further comprising the step of:

determining a relative importance of weather conditions and broadcasting a weather advisory including more important weather conditions.

9. A method as described in claim 1, further comprising the step of:

in response to congestion on the radio frequency, reducing a length of the weather advisory by including more important weather parameters.

10. A method as described in claim 1, further comprising the steps of:

categorizing broadcasts from other sources based on a length of a corresponding carrier signal; and
adapting a length of the weather advisory based on a level of traffic on the radio frequency.

11. A method as described in claim 1 further comprising the step of:

delaying broadcast of a weather advisory if there is a high level of traffic on the radio frequency.

12. A method for providing weather information to pilots for an airport, comprising:

determining weather conditions for the airport;
monitoring a radio frequency, assigned to voice communications of the airport, for a predetermined protocol indicative of a pilot attempt to access the weather information;
monitoring the radio frequency for inactivity with no voice transmissions from other sources;
broadcasting an audio weather advisory on the radio frequency in response to detecting the inactivity after detecting the predetermined protocol, the weather advisory being derived from the determined weather conditions;

determining if a weather advisory has been recently broadcast; and

stopping the broadcast of a new weather advisory if another weather advisory was broadcast.

13. A method for providing weather information to pilots for an airport, comprising:

determining weather conditions for the airport;
monitoring a radio frequency, assigned to voice communications of the airport, for a predetermined protocol indicative of a pilot attempt to access the weather information;

monitoring the radio frequency for inactivity with no voice transmissions from other sources;

broadcasting an audio weather advisory on the radio frequency in response to detecting the inactivity after detecting the predetermined protocol, the weather advisory being derived from the determined weather conditions;

determining a level of traffic on the radio frequency; and

11

adaptively changing a length of the broadcast weather advisory in response to the traffic.

14. A method for providing weather information to pilots for an airport, comprising:

determining weather conditions for the airport;
monitoring a radio frequency, assigned to voice communications of the airport, for a predetermined protocol indicative of a pilot attempt to access the weather information;

monitoring the radio frequency for inactivity with no voice transmissions from other sources;

broadcasting an audio weather advisory on the radio frequency in response to detecting the inactivity after detecting the predetermined protocol, the weather advisory being derived from the determined weather conditions; and

automatically broadcasting a message announcing a presence of a system providing the weather information and instructions for its operation.

15. A method for providing weather information to pilots for an airport, comprising:

determining weather conditions for the airport;
monitoring a radio frequency, assigned to voice communications of the airport, for a predetermined protocol indicative of a pilot attempt to access the weather information;

monitoring the radio frequency for inactivity with no voice transmissions from other sources;

broadcasting an audio weather advisory on the radio frequency in response to detecting the inactivity after detecting the predetermined protocol, the weather advisory being derived from the determined weather conditions;

detecting a broadcast on the radio frequency from another source after an extended period of no broadcasts on the radio frequency; and

broadcasting the weather advisory.

16. A method for providing weather information to pilots for an airport, comprising:

determining weather conditions for the airport;
monitoring a radio frequency assigned to the airport for a predetermined protocol indicative of a pilot attempt to access the weather information;

monitoring the radio frequency for transmissions from other sources;

determining a level of traffic on the radio frequency;
adaptively changing a length of a weather advisory in response to the traffic; and

broadcasting the weather advisory derived from the determined weather conditions on the radio frequency in response to detecting the predetermined protocol.

17. A method as described in claim 12, further comprising automatically broadcasting a message announcing a presence of a system providing the weather information and instructions for its operation.

18. A method as described in claim 16, wherein the step of monitoring the radio frequency for the predetermined protocol comprises:

applying a voice recognition algorithm to the transmission on the radio frequency; and

broadcasting the weather advisory if a selected phrase was detected.

19. A method as described in claim 16, wherein the step of monitoring the radio frequency for the predetermined protocol comprises:

12

detecting clicks from a transmit button of another transceiver on the radio frequency; and

broadcasting the weather advisory if a selected number of clicks was detected.

20. A system for broadcasting weather advisories to pilots, comprising:

an automatic weather station which generates weather data indicative of ambient weather conditions;

a transceiver which generates a carrier detect signal in response to transmissions from other sources on a radio frequency, which is assigned for voice communication, and broadcasts weather advisories over the radio frequency; and

a central processing unit which monitors the carrier detect signal for inactivity on the radio frequency and generates the voice weather advisories in response to transmission of an activating signal over the radio frequency followed by inactivity on radio frequency determined from the carrier detect signal, the central processing system classifying broadcasts from the other sources in response to lengths of the carrier detect signal.

21. A system as described in claim 20, wherein the central processing unit classifies broadcasts by other sources in response to the lengths of the carrier detect signals, and adaptively changes lengths of the weather advisories in response to the classifications.

22. A system as described in claim 20, wherein the central processing unit stops the broadcast of the weather advisory after receiving the activating signal in response to detecting transmissions from other sources lasting over a set time period.

23. A system as described in claim 20, wherein the central processing unit determines a level of traffic on the radio frequency and stops the broadcast of the weather advisory based on the level of traffic.

24. A system as described in claim 20, wherein the central processing unit reviews the determined weather conditions, identifies any relevant weather parameters, and includes only relevant weather parameters in the broadcast weather advisory.

25. A system as described in claim 20, wherein the central processing unit applies a voice recognition algorithm to detect transmission of the activating signal.

26. A system as described in claim 20, wherein the central processing unit monitors the carrier detect signal to detect transmission of the activating signal.

27. A system for broadcasting weather advisories to pilots, comprising:

an automatic weather station which generates weather data indicative of ambient weather conditions;

a transceiver which generates a carrier detect signal in response to transmissions from other sources on a radio frequency, which is assigned for voice communication, and broadcasts weather advisories over the radio frequency; and

a central processing unit which monitors the carrier detect signal for inactivity on the radio frequency and generates the voice weather advisories in response to transmission of an activating signal over the radio frequency followed by inactivity on radio frequency determined from the carrier detect signal, the central processing unit determining if a weather advisory has been broadcast and stops the broadcast of another weather advisory in response to the broadcast weather advisory.

28. A system for broadcasting weather advisories to pilots, comprising:

13

an automatic weather station which generates weather data indicative of ambient weather conditions;

a transceiver which generates a carrier detect signal in response to transmissions from other sources on a radio frequency, which is assigned for voice communication, and broadcasts weather advisories over the radio frequency; and

a central processing unit which monitors the carrier detect signal for inactivity on the radio frequency and generates the voice weather advisories in response to transmission of an activating signal over the radio frequency followed by inactivity on radio frequency determined from the carrier detect signal, the central processing unit determining a level of traffic on the radio frequency and adaptively changing a length of the broadcast weather advisory in response to the traffic.

29. A system for broadcasting weather advisories to pilots, comprising:

an automatic weather station which generates weather data indicative of ambient weather conditions;

a transceiver which generates a carrier detect signal in response to transmissions from other sources on a radio frequency, which is assigned for voice communication, and broadcasts weather advisories over the radio frequency; and

a central processing unit which monitors the carrier detect signal for inactivity on the radio frequency and generates the voice weather advisories in response to transmission of an activating signal over the radio frequency followed by inactivity on radio frequency determined from the carrier detect signal, the central processing unit generating a message announcing a presence of the system and instructions for its operation.

30. A system for broadcasting weather advisories to pilots, comprising:

an automatic weather station which generates weather data indicative of ambient weather conditions;

a transceiver which generates a carrier detect signal in response to transmissions from other sources on a radio frequency, and broadcasts weather advisories over the radio frequency; and

a central processing unit which monitors the carrier detect signal for activity on the radio frequency and generates

14

the weather advisories in response to transmission of an activating signal over the radio frequency and changes length of the weather advisories in response to the level of the activity.

31. A method for providing weather information to pilots for an airport, comprising:

determining weather conditions for the airport;

monitoring a radio frequency, assigned to voice communications of the airport, for a predetermined protocol indicative of a pilot attempt to access the weather information;

monitoring the radio frequency for inactivity with no voice transmissions from other sources;

broadcasting an audio weather advisory on the radio frequency in response to detecting the inactivity after detecting the predetermined protocol, the weather advisory being derived from the determined weather conditions;

determining if a weather advisory has been broadcast; and stopping the broadcast of a new weather advisory if another weather advisory was broadcast.

32. A method for providing weather information to pilots for an airport, comprising:

determining weather conditions for the airport;

monitoring a radio frequency, assigned to voice communications of the airport, for a predetermined protocol indicative of a pilot attempt to access the weather information;

monitoring the radio frequency for inactivity with no voice transmissions from other sources;

broadcasting an audio weather advisory on the radio frequency in response to detecting the inactivity after detecting the predetermined protocol, the weather advisory being derived from the determined weather conditions;

determining a level of traffic on the radio frequency; and stopping the broadcast of the weather advisory in response to the level of traffic.

* * * * *